Science Toolkit: Grade 5 Objective 1.A.1.b

Student Handout: Science: Grade 5 Objective 1.A.1.b

Standard 1.0 Skills and Processes

Topic A. Constructing Knowledge

Indicator 1. Gather and question data from many different forms of scientific investigations which include reviewing appropriate print resources, observing what things are like or what is happening somewhere, collecting specimens for analysis, and doing experiments.

Objective b. Select and use appropriate tools hand lens or microscope (magnifiers), centimeter ruler (length), spring scale (weight), balance (mass), Celsius thermometer (temperature), graduated cylinder (liquid volume), and stopwatch (elapsed time) to augment observations of objects, events, and processes.

Selected Response (SR) Item

Question

Use the passage 'Rusty Crayfish: A Small Invader Causing Big Problems' to answer the following.

Which tool would best help people notice the differences in physical features between a rusty crayfish and a native crayfish?

A. a balance
B. a hand lens
C. a thermometer
D. a graduated cylinder

Correct Answer

B. a hand lens

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Handouts

Rusty Crayfish: A Small Invader Causing Big Problems

Question Image

The rusty crayfish originated in the Ohio River Basin. This invader species began to spread into the Great Lakes regions. They compete with the native crayfish and also, greatly decrease the amount of vegetation, thereby impacting entire food webs.

The rusty crayfish have a large eating capacity when consuming aquatic[1] plants. In addition, they eat aquatic insects.When the rusty crayfish reproduce, they can lay 50—575 eggs at one time.

Due to their hyper-appetite, rusty crayfish greatly decrease the amount and diversity[2] of plants in aquatic areas, increase competition with native crayfish, and consume an abnormal amount of other aquatic species.When the rusty crayfish invade, they are disrupting[3] the entire ecosystem.

The decreased amount of diversity in vegetation affects the population of many other aquatic species in the surrounding ecosystem. Plant beds provide a habitat for invertebrates[4] as well as shelter for many different species of fish. When vegetation is disturbed, all of the species which rely on it have a harder time surviving.

Rusty crayfish displace the native species of crayfish from the aquatic ecosystems it invades. In a study of 150 lakes and streams that had been invaded by the rusty crayfish, seventy-five percent had no native crayfish remaining. The displacement occurs through competition for food. Because the “rusty” is so aggressive, natives get beat out when feeding and soon their population greatly decreases.

As aquatic species disappear, disruption of the food web occurs, which affects all the species in an ecosystem. By introducing rusty crayfish to new ecosystems, they have a great potential to crumble.

[1]aquatic — in water
[2]diversity — variety, mixture
[3]disrupting — change
[4]invertebrates — no backbones